

We claim:

- 1 1. A large-waterplane-area ship, comprising:  
2 a hull structure having a plurality of exclusive hull portions protruding from a main  
3 body of the hull structure, each hull portion having a length shorter than the length of the  
4 main body and each hull portion having a buoyancy wherein the combined buoyancy of  
5 each hull portion is sufficient to support the main body above a waterline.
- 1 2. The ship of claim 1 wherein the plurality of hull portions comprise a triangular  
2 pattern.
- 1 3. The ship of claim 1 wherein the plurality of hull portions comprise a quadrangular  
2 pattern.
- 1 4. The ship of claim 1 wherein the plurality of hull portions comprise a octangular  
2 pattern.
- 1 5. The ship of claim 1 wherein each of the plurality of exclusive hull portions each  
2 has a Froude number greater than approximately 0.8 during a cruising mode of  
3 operation of the ship.
- 1 6. A large-waterplane-area ship, comprising:  
2 a hull structure having a plurality of exclusive hull portions protruding from a main  
3 body of the hull structure, each hull portion having a Froude number greater than  
4 approximately 0.8 during a cruising mode of operation of the ship.
- 1 7. The ship of claim 7 wherein each of hull portions has a length, and wherein the  
2 length of the largest hull portion isles than a length of the main body.
- 1 8. The ship of claim 7 wherein each hull portion has a length different from the  
2 length of any other hull portion.

- 1 9. A ship, comprising:  
2 a main body having a length;  
3 a plurality of struts protruding from the main body; and  
4 a plurality of pontoons each coupled to at least one of the plurality of struts, each  
5 pontoon having a length shorter than the length of the main body and each pontoon  
6 having a buoyancy wherein the combined buoyancy of each pontoon is sufficient to  
7 support the main body above a waterline, and wherein each pontoon has a Froude  
8 number greater than approximately 0.8 during a cruising mode of operation of the ship.
- 1 10. The ship of claim 10 wherein the combined buoyancy of each pontoon is  
2 sufficient to support the struts above the water line.
- 1 11. The ship of claim 9 wherein each strut is attached to one and only one pontoon.
- 1 12. The ship of claim 11 wherein the length of each pontoon is longer than the length  
2 of its attached strut.
- 1 13. The ship of claim 9 wherein each strut is attached to a plurality of pontoons.
- 1 14. The ship of claim 9 wherein the combined buoyancy of the pontoons is adjustable  
2 to a level such that the ship operates at one of a plurality of operating modes.
- 1 15. The ship of claim 14 wherein the level corresponds to a catamaran operating  
2 mode.
- 1 16. The ship of claim 14 wherein the level corresponds to a small-waterplane-area  
2 twin hull (Swath) operating mode.

- 1 17. A method of forming a hull for a ship, comprising:  
2 forming a main body having a length; and  
3 coupling a plurality of independent hull portions to the main body, each hull portion  
4 having a length that is less than the length of the main body.
- 1 18. The method of claim 17 wherein each hull portion has a different length.
- 1 19. The method of claim 17 further comprising adjusting a draft of the ship by  
2 ballasting one or more of the independent hull portions.
- 1 20. The method of claim 17 wherein coupling a plurality of independent hull portions  
2 to the main body comprising coupling three independent hull portions to the main body  
3 in a triangular pattern.
- 1 21. The method of claim 17 wherein coupling a plurality of independent hull portions  
2 to the main body comprising coupling four independent hull portions to the main body in  
3 a rectangular pattern.
- 1 22. A method of operating a ship, comprising:  
2 forming a main body having a length;  
3 coupling a plurality of independent hull portions to the main body, each hull  
4 portion having a length that is less than the length of the main body; and  
5 powering the boat to a cruising velocity, wherein at the cruising velocity each of the  
6 independent hull portions has a Froude number greater than approximately .8.
- 1 23. The method of claim 22 wherein coupling a plurality of independent hull portions  
2 to the main body comprising arranging the hull portions in a predetermined pattern on

3 the main body, the pattern being selected to obtain independent hull characteristics for  
4 each hull during powering the boat to a cruising velocity.

1 24. The method of claim 22 wherein each hull portion has a different length.

1 25. The method of claim 22 further comprising adjusting a draft of the ship by  
2 ballasting one or more of the independent hull portions.

1 26. A ship having a cruising speed at a Froude number that is greater than 0.5.